HP StorageWorks Replication Solutions Manager 1.1 release notes

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Release notes contents

This document contains information about the 1.1 release of HP StorageWorks Replication Solutions Manager (referred to as the replication manager throughout this document). Topics include:

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The information included here is not documented elsewhere, so HP recommends that you read this information thoroughly before installing and using the replication manager.

For supported storage arrays, management server hardware and software, and replication software environments, including restrictions, see the *HP StorageWorks EVA software compatibility reference* on the HP StorageWorks Business Copy EVA and Continuous Access EVA web sites: http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html, and http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html.

Intended audience

This document is intended for customers and HP-authorized service providers who plan to install and use HP StorageWorks Replication Solutions Manager 1.1.

New features

The following features are new with HP StorageWorks Replication Solutions Manager 1.1.

- Support for new and continued HP StorageWorks Enterprise Virtual Array (EVA).

  - EVA3000

  - EVA4000

  - EVA5000

  - EVA6000

  - EVA8000

- Support for array firmware versions 3.025 and 5.0.

- Support of HP StorageWorks Business Copy EVA 3.0 preallocated snapclones. See the *HP StorageWorks Business Copy EVA 3.0 release notes* for details.

  - Instant restore. Use the replication manager graphical and command line user interfaces to create virtual disks from snapclones.

  - Import legacy jobs. Use the graphical interface to create replication manager jobs from HP Business Copy EVA 2.x jobs.

- Support for HP StorageWorks Continuous Access EVA 2.1 new features: auto suspend on links down, full copy control, destination access mode and Vraid level disk group selection for DR Group, log disk size selection, and suspend on failover. See the *HP StorageWorks Continuous Access EVA 2.1 release notes* for details.

- Updated host agents for HP-UX, Linux, Windows, and Solaris. Host agents now support Windows 64-bit versions and, for EVA3000 and EVA5000 models, VERITAS Volume Manager and File System components of VERITAS Foundation Suite 3.5.

- New job commands, job templates, and job scheduler.

- New host agents for IBM AIX.

Obtaining the software from the Web

You can download the replication manager 1.1 server and host agent software at no cost.

1. Go to the HP Storageworks Continuous Access EVA site. (You can use this site whether you use HP Continuous Access or not.)

   - HP StorageWorks Continuous Access EVA <http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html>

2. Click **Software & drivers**.

3. Download HP StorageWorks Replication Solutions Manager v1.1 - Server. Only one download is required.

4. If you have Windows hosts, download HP StorageWorks Replication Solutions Manager v1.1 - Host Agents (Windows). Only one download is required.

5. If you have UNIX/Linux hosts, download HP StorageWorks Replication Solutions Manager v1.1. Only one download is required.

6. To obtain product documentation, click **manuals (guides, supplements, addendums, etc)** in the self-help resources section of the page.

See *HP StorageWorks Replication Solutions Manager installation and administrator guide* for the installation procedures.

Known issues and resolutions

This section describes known issues and workarounds for this release. Also see the release notes for the licensed replication products HP Business Copy EVA 3.0 and HP Continuous Access EVA 2.1. Issues that affect all implementations of local and remote replication are documented there.

Installation and configuration issues

EVA4000/6000/8000 direct-connect is not supported

The replication manager is not supported in direct-connect configurations, except with Windows hosts and with restrictions. Specifically, you cannot mount snapshots or snapclones on a Windows host that is directly attached to an EVA4000, EVA6000, EVA8000 array.

Replication manager - EVA communication failure. No storage in the replication manager interface

ProLiant servers include the SmartStart utility to assist with operating system and software installation and array configuration. Using SmartStart 7.2 may cause login failures for applications using the HP Command View EVA API. Specifically, a login failure will occur if you build the management server using SmartStart 7.2 and then install the HP Command View EVA software suite.

> **NOTE:**
> Using SmartStart 7.2 to upgrade a management server on which HP Command View EVA was previously installed will not cause the login failure to occur. SmartStart 7.2 is a problem only with new HP Command View EVA installations.

Resolution: reset the HP Command View API password. After installing HP Command View EVA on a ProLiant server that uses SmartStart 7.2, run the following executable (where "administrator" is the new password that you want to use):

c:\Program Files\Hewlett-Packard\SANworks\Element Manager for StorageWorks HSV\Bin\elmsetup.exe -pA: administrator -f

Go to the services window and restart the HP Command View EVA service. The new password takes effect only after you restart this service.

Consider the following when using this procedure:

- Only a user with system administrator authority can reset the HP Command View API password.

- If security of the executable used to reset the password is a concern, HP recommends that you remove this executable from the server. For example, you could put the utility on a CD and store the CD in a secure location.

- You can use this executable to reset the password if it is forgotten.

Removing the replication manager server leaves a null file

After removing the replication manager, you start up the management server and Windows warns you that there is a null file.

Resolution: the following steps can be used to delete the null file.

1. Select **Start > Programs > Startup**.

2. Right click **null**.
3. Click **delete**.

Firewall configurations

A firewall between the replication manager server and an enabled host is not supported. The server and host agent cannot communicate across the firewall.

A firewall between a browsing computer and the replication manager server is supported. You can browse to the replication manager through a VPN tunnel.

Operational errors

Low-Level Refresh returns an error

When you perform a low-level refresh on a virtual disk or DR group, the replication manager may log the message: `Unable to complete the requested action because of an unexpected error`. This can occur when the replication manager is unable to discover the selected disk or DR group.

Resolution: check your storage array, and then retry the low-level refresh.

Table 1. shows the commands and GUI actions that perform low-level refresh.

Table 1 Low-level refresh actions and commands

In the CLUI:	In the GUI:
`set dr <dr group> refresh`	`virtual disks>actions>low-level refresh`
`show dr <dr group> refresh`	`dr groups>actions>low-level refresh`
`set container <container> refresh`	`managed sets>actions> low-level refresh (for virtual disk and dr group managed sets)`
`show container <container> refresh`	
`show snapclone <snapclone> refresh`	
`set vdisk <vd>refresh`	
`show snapshot <snapshot> refresh`	

Host volume remount fails after an unclean unmount

If a host volume is uncleanly unmounted, such as during an unplanned failover, and you try to remount it using the replication manager, the replication manager logs this error message:

`The filename, directory name, or volume label syntax is incorrect for the operating system associated with this mount point.`

Resolution: log on the host and check the file system on the host volume device. Once the device is clean, retry the mount command in the replication manager.

Unable to resume DR group

When attempting to resume a DR group, the replication manager logs the message: `Unable to resume DR group <GroupName> because of current state of group for job <JobName>.`

Resolution:

1. In the DR Groups List tab or Tree tab, check the operational status of the DR group.

2. If the status is failed (red), use HP Command View EVA to check the status of the DR group (see HP Command View EVA online help)

3. In HP Command View EVA, issue a resume command to resume the DR group.

📝 **NOTE:**
In the replication manager, the failed DR group status does not change until the next automatic or manual refresh.

Second snapclone of the same storage volume or host volume fails

The second snapclone of the same storage volume or host volume fails and the replication manager logs a message like: `Copy type CLONE not available or no resource bundle`

This can occur when you run and then quickly rerun the same job.

This issue can also occur because the replication manager database was not refreshed after the first snapclone was completed. When the second snapclone is requested, the replication manager encounters the out-of-date normalization status in the database and fails the requested snapclone action

Resolution: you can make multiple snapclones of a source volume. However, only one snapclone can be in the normalization (unsharing) phase at one time. If the second snapclone action is started too soon, the action can fail.

Maximum DR Group log size error

If you enter an invalid value, the replication manager logs an error and does not set the maximum log size for the DR group.

Resolution: valid values are from 136MB to 2TB. Accept or enter zero (0) to apply the firmware default size algorithm.

Storage error when running more than two jobs accessing the same array

Running more than two jobs simultaneously on the same array can return the following error on the third and any other jobs: `Data replication failed- device error.  Data replication failed for <job>.  Borg error code 600017.  Error cannot create object. Storage system lock error.`

The first two jobs run successfully, but additional jobs fail.

Resolution: Avoid running, or scheduling to run, more than two jobs that access virtual disks on the same array at the same time.

Capture System command fails in CLUI

RSM CLUI `Capture System` command fails with the following error: `XL041>c sys 500 Command Failure java.lang.OutOfMemoryError XL041>`

As the data (logs, database, config files, etc) that is being retrieved from the server grows large enough, this command fails. Unless the logs are cleared, this state will remain until the next replication manager release. The list of files and directories that are retrieved are in the `hostagent/config dir` in a property file named `cluiframework.scp`.

Resolution: manually retrieve the files from the server if this issue arises.

Enabling failsafe mode with a managed set fails

Attempting to enable failsafe mode for a managed set of DR groups fails. The replication manager logs the message: `Not available::  ERROR: failsafe() not available in current state`.

This can occur when the managed set in a GUI action or CLUI command contains one or more DR groups whose remote replication I/O mode is set to asynchronous. Enabling the failsafe mode would result in an invalid DR group configuration, so the action is failed. See also the issue "Invalid DR group pair configuration."

Invalid DR group pair configuration

You can use GUI actions or CLUI commands to create a DR group pair with the following invalid configuration: `failsafe mode enabled with synchronous remote replication I/O mode`.

If you find this invalid configuration and attempt to use CLUI commands to disable the failsafe mode, the replication manager logs the message: `Failed to set failsafe for DR Group, group is currently :failsafe is already enabled`.

Use the GUI or CLUI commands to set a valid configuration. To retain an asynchronous I/O mode and disable the failsafe mode:

1. Change the remote replication I/O mode to synchronous.
2. Change the failsafe mode to disabled.
3. Change the remote replication I/O mode back to asynchronous.

Job issues

Incorrect last run date displayed in job tabs

In the Job List tab and Schedule tab, the date in the Last Run field may be incorrect. Selecting a job based on the last run date may bring up the wrong job instance.

Resolution: use the Jobs Run History tab to determine the last successful run time and to monitor job instances.

Issuing XCS 5.020 new feature commands against VCS 3.x for DR Groups

In a job, if you create a DR Group and specify, a feature that is not supported by the array firmware, the DR Group is created and the unsupported command is ignored. The following command arguments are ignored when you create or specify a DR Group on VCS 3.x:

- Setting auto suspend when creating a new DR group:`CreateDRGroup (%drgroup_name%, %storvol_unc_name%, %dest_storsys_name%, "", "",SAME, "", "", 0, `**`TRUE`**`)`

- Setting auto suspend for an existing DR group: `SetDrGroupAutoSuspendOnLinksDown (%drgroup_unc_name%, `**`TRUE`**`)`

- Setting the destination RAID level to other than same when creating a new DR group::`CreateDrGroup (%drgroup_name%, %storvol_unc_name%, %dest_storsys_name%, "", "", `**`RAID5`**`, "", "", 0, FALSE )`

- Specifying a log disk group when creating a new DR group: `CreateDrGroup ( %drgroup_name%, %storvol_unc_name%, %dest_storsys_name%, `**`"\\hsv01\DiskGroup1"`**`, "", SAME, "", "",0, FALSE )`

- Specifying the maximum log size (MB) when creating a new DR group:`CreateDrGroup ( %drgroup_name%, %storvol_unc_name%, %dest_storsys_name%, "", "", SAME, "", "", `**`2000`**`, FALSE )`

- Specifying the maximum log size (MB) for an existing DR group `SetDrGroupMaxLogSize (%drgroup_unc_name%, `**`1000`**` )`

Job schedule does not import

When you import a previously exported replication manager database, the jobs are imported but scheduled job events are not.

HP recommends that you manually record schedule information before exporting and reapply the information after importing.

To record scheduled job events:

1. On the Jobs content pane, click the **Schedule** tab. (If no job names appear on the Schedule tab, there are no scheduled job events.)

2. Select a job event.

3. Click **Actions > View Properties**. The Job Schedule Properties window opens.

4. Record the scheduled job event information.

5. Repeat steps 2 through 4 for each scheduled job event.

> **NOTE:**
> The replication manager uses the system time on the management server to start scheduled job events. If the replication manager database is imported to a management server in a different time zone, you may want to adjust the start times.

Other issues

A snapclone remains in constructing state for an extended period of time

Although a snapclone is actually created quickly on the storage array, the discovery of the new snapclone and the subsequent refresh of the replication manager database and resource windows can take some time. For example, a new snapclone may not be discovered and displayed for up to 30 minutes (the default automatic discovery and refresh interval).

Resolution: after performing a snapclone action, be sure to refresh the storage resources and database. See procedures for low-level refreshing and manually refreshing storage resources in the *HP StorageWorks Replication Solutions Manager online help & user guide.*

Container option not present in example for SnapcloneStorageVolumeToContainer

In the *HP StorageWorks Replication Solutions Manager online help & user guide,* the example for the job command `SnapcloneStorageVolumeToContainer` is incorrect. The example should be: `SnapcloneStorageVolumeToContainer ( "<\\ArrayA2\Cats>", "<\\ArrayA2\CatsContainer>", NOWAIT ).`

Source-source DR Groups

Under the source-source condition, the replication manager exhibits the following symptoms:

- In the replication manager GUI, both sides appear as source, but only one of them allows source operations in the menu, and the other shows only destination operations in the menu

- In the replication manager CLUI, issuing a `show dr <drgroup>` on the new source shows it as still a destination. Only destination operations to be executed against this DR Group.

If you encounter a source-source DR Group in the replication manager, then you must use HP Command View EVA or Storage System Scripting Utility to resume the suspended DR Group. Once the DR Group is resumed, the source and destination are correct and you may continue to use the replication manager.

NOTE:
Because of the possibility of this condition in an unplanned failover, use care when using autosuspend or failover with suspend options.

Slow login times

After entering a user name and password to log in to the replication manager server, there is no response for 30 seconds or more.

This does not indicate that the server application has stopped.

Replication manager pop-up windows are not visible

After navigating from an open pop-up window to the replication manager main window, or to another application window, clicking a taskbar button does not redisplay the pop-up window.

Replication manager pop-up windows can become hidden under the main replication manager window, or under other application windows. Clicking the taskbar button for the replication manager displays the main window, but not the hidden pop-up window.

If this occurs on a Windows computer:

1. Press and hold the **Alt** key.
2. Press and release the **Tab** key once. A menu of available windows opens.
3. Press and release the **Tab** key until the pop-up window is selected.
4. Release the **Alt** key. The selected pop-up window is displayed.

HP OpenView Storage Area Manager issues

Host agent upgrade requires local installation

Using remote deployment does not upgrade the host agent for HP-UX

Resolution. Do not use the remote deployment method to upgrade host agents for HP-UX from version 1.0 to version 1.1.

Instead, for each HP-UX enabled host:

1. Ensure that no replication manager jobs involving the enabled host are running or scheduled to run during the upgrade.

2. Remove the host agent using the appropriate procedure. Removal procedures depend on the original installation method, remote deployment or local installation. See chapter 6 Removing the software.

3. After removal is complete, install the version 1.1 host agent using the local installation method.

4. After the host agent is installed and started, use the replication manager GUI and confirm that the enabled host and its host volumes have been discovered that their status is good (not failed).

Windows 2003 SE Host Agent does not detect deployed host agent

Using HP OpenView Storage Area Manager deployment on a Windows host in application mode is not supported.

Do not deploy to a Windows host that is in application mode. For the Storage Area Manager deployment to work, the Windows host must be in administrative mode.

Host agent installation is incomplete

After using remote deployment to install a host agent, the replication manager server is unable to communicate with the enabled host.

If the host's home directory does not have sufficient free space, the host agent files are not installed. At least 200 MB is required in the home directory for installation by remote deployment.

1. On the host, check the directory `c/opt/sanmgr/bcca_agent`. If the directory is empty, perform the following steps.

2. Issue the host command echo $HOME to determine the home directory.

3. Check the free space in the home directory.

4. If the free space is less than 200 MB, use one of the following procedures.

   • Increase the free space to at least 200 MB and rerun the remote deployment installation, or

   • Refer to the *HP StorageWorks installation and administrator guide* and use the local installation method, specifying the `is:tempdir` option.

HP-UX issues

Job with CreateHostVolume command fails

A job that replicates a storage volume fails at a `CreateHostVolume` command when attempting to create a host volume on an HP-UX enabled host. The replication manager logs a message such as
`Unknown exception on host:  Volume group /dev/h32xg02_RV0 failed to create:`
`Volume Group /dev/h32xg02_RV0 is still active.`

The HP-UX kernel recognizes device drivers and peripheral devices by major and minor numbers. The driver uses minor numbers to locate specific devices. HP-UX sometimes does not release device minor numbers after a volume group is removed. When the `CreateHostVolume` command is run, the volume group appears to still be active and the command fails.

Reboot the host to resolve this issue.

IMPORTANT: Before proceeding, coordinate the reboot activities to avoid disruption of host services to others.

1. Ensure that no replication manager jobs involving the host are running or scheduled to run during the reboot.

2. Close applications on the host, as appropriate.

3. Reboot the host. This clears the device minor numbers for the host memory.

4. Restart applications on the host, as appropriate.

5. Rerun the replication manager job.

Host agent discovery hangs and times out

If a device on an enabled host is in a failed state, the discovery of host volumes on that host can hang and cause the discovery to time out. This can happen on HP-UX 11.23 and 11.11.

This issue is caused by the OS. Failed devices on the enabled host must be removed or corrected.

Job with MountEntireVolumeGroup command fails

A job that replicates and mounts a volume group fails at a `MountEntireVolumeGroup` command when attempting to mount the volume group on an HP-UX enabled host. The replication manager logs a message such as `Host Volume has unknown or incompatible ....`

This can occur when a job is run repeatedly. If the replication manager discovers a volume group at the same time that a job command is attempting to remove the volume group, an error allows the underlying storage to be unpresented from the host, even though the volume group is still active.

When the job is run again, the volume group cannot be replicated and the job fails at the mount step because there is no underlying storage available.

Installing host agent on an HP-UX 11.11 operating system

The Owner ID and Group ID do not display properly when mounting the replication manager host agent CD on an HP-UX 11.11 operating system.

Install the following patches for HP-UX 11.11.

PHCO_25841

PHKL_26269

PHKL_32035

After installing the required HP-UX patches, use the following command to mount the replication manager host agent CD on your HP-UX 11.11 host: `mount —f cdfs —orr /dev/dsk/cxtydz /mountpoint`.

The Owner ID and Group ID display properly.

Sun Solaris issues

Solaris with MPxIO on initial installation of EVA4000/6000/8000

Before using the Solaris host agent with the replication manager, MPxIO must be configured to use the EVA4000/6000/8000 storage arrays. Use the `cfgadm` commands to configure the ports for all the storage arrays that will be used with the Solaris host.

Example:

Execute the following command to reveal the unconfigured ports.

```
# cfgadm -al -o show_FCP_dev
```

This command gives the following output:

```
Ap_Id Type Receptacle Occupant Condition

c2 fc-fabric connected unconfigured unknown

c2::200000017301593b unknown connected unconfigured unknown

c2::50001fe100154088 array-ctrl connected unconfigured unknown

c2::50001fe10015408c array-ctrl connected unconfigured unknown

c3 fc-fabric connected unconfigured unknown

c3::200000017381593b unknown connected unconfigured unknown

c3::50001fe100154089 array-ctrl connected unconfigured unknown

c3::50001fe10015408d array-ctrl connected unconfigured unknown

# cfgadm -c configure c2::50001fe100154088

# cfgadm -c configure c2::50001fe10015408c

# cfgadm -c configure c3::50001fe100154089

# cfgadm -c configure c3::50001fe10015408d

# devfsadm -C

# cfgadm -al -o show_FCP_dev

Ap_Id Type Receptacle Occupant Condition

c2 fc-fabric connected configured unknown

c2::200000017301593b unknown connected unconfigured unknown

c2::50001fe100154088,0 array-ctrl connected unconfigured unknown

c2::50001fe100154088,1 disk connected configured unknown

c2::50001fe10015408c,0 array-ctrl connected unconfigured unknown

c2::50001fe10015408c,1 disk connected configured unknown

c3 fc-fabric connected configured unknown

c3::200000017381593b unknown connected unconfigured unknown

c3::50001fe100154089,0 array-ctrl connected unconfigured unknown

c3::50001fe100154089,1 disk connected configured unknown
```

```
c3::50001fe10015408d,0 array-ctrl connected unconfigured unknown

c3::50001fe10015408d,1 disk connected configured unknown
```

For each "unconfigured" Ap-Id perform the following commands:

```
#cfgadm –c configure c3::50001fe100270ad8
```

```
#cfgadm –c configure c3::50001fe100270adc
```

```
#cfgadm –c configure c4::50001fe100270ad9
```

```
#cfgadm –c configure c4::50001fe100270add
```

This configuration procedure must be repeated each time a new EVA4000/6000/8000 storage array is added to the SAN and is to be used with Solaris. Please see the documentation for Sun StorEdge SAN at www.sun.com/storage/san for more information on using and configuring MPxIO.

Solaris enabled hosts require HBA driver libraries (SNIA)

If the required HBA driver libraries are not installed on a Solaris enabled host, incorrect HBA information is reported in the replication manager HBA/ports tab of the Enabled Host properties window. This condition does not affect HBA operation, only the information reported to the replication manager.

Resolution: You must install HBA driver libraries on the host. The libraries come with HP Secure Path for Sun Solaris but are not installed by default. The libraries are sometimes called *SNIA libraries* in reference to the Storage Networking Industry Association standards regarding HBAs.

- For JNI and Sun native HBAs, install the JNI SNIA Fibre Channel HBA library. The package name is `JNIsnia`.

- For QLogic HBAs, install the QLogic SDM libary. The package name is `QLSDMLIB` .

To install the HBA driver libraries:

1. Back up the files on the enabled host.

2. Check that `vold`, the volume management daemon, is running by entering:
   `ps –ea | grep vold.`

3. If `vold` is running:

   a. Insert the HP Secure Path v3.0D CD-ROM into the CD-ROM drive

   b. Check that the enabled host has automatically mounted the CD-ROM, by entering:
      `mount`

   c. Change to the Solaris directory by entering:
      `cd /cdrom/sp_v30d_sun/solaris`

   d. Go to step 5.

4. If `vold` is not running:

   a. Insert the HP Secure Path CD-ROM into the CD-ROM drive.

   b. Mount the CD-ROM. For example, enter:
      `mount –f hsfs –r /dev/dsk/c0t6d0s2 /cdrom`

   c. Change to the Solaris directory by entering:
      `cd /cdrom/solaris`

5. Install the HBA library packages.

   - To install the HBA driver library for JNI and Sun native HBAs enter:
     `# pkgadd -d .  JNIsnia`

- To install the HBA driver libarary for QLogic HBAs enter:
  ```
  # pkgadd -d .   QLSDMLIB
  ```

Linux issues

Remount job failed but cannot find the host volume

The replication manager correctly creates and mounts a volume group on Linux. You cannot unmount the first copy and then remount it on another host. The job template `Replicate host volume(s), mount to a host, then to a different host` is not supported by Linux. The context of the volume group is lost after the first mount.

CreateHostVolumeGroup executes for extended period of time

The QLogic HBA driver on Linux by default scans or supports 32 LUNs from an array to the host. If there are more LUNs , `CreateHost*` commands execute for an extended period of time, and the replication manager host agent does not report that the LUN is not found.

(*) This refers to the various `CreateHost` commands.

Resolution: modifying the default value of `LUNEND` variable in the file `/opt/hp/hp_fibreutils/probe-luns` corrects this. Then rerun the job.

If the QLogic HBA driver is in an frozen state and LUNs are not visible to the Linux host, the same failure occurs. In this case you must reload the QLogic driver or reboot the Linux host.

DiscoverDiskDevicesForDrGroup takes over an hour for Linux Redhat

Using the Planned failover template with EVA3000 and EVA5000 for the failover on Linux RedHat 3.0 takes over an hour for each discovery.

Resolution: When long delays occur, you can bring task durations back to normal by rebooting the host.

Unknown exception in transport layer. Linux Suse host hangs during planned fail

The utility `hp_rescan` that is called by the replication manager host agent goes into a suspended state. The host agent suspends also, waiting for the `hp_rescan` to complete.

A reboot is required to fix this. If a host becomes unresponsive or a job suspends in the `CreateHostVolume` step of a job, examine the process list on the host. If the `hp_rescan` utility appears to be in a suspended state, restart the host.

Windows issues

Import fails because Windows does not by default add .xml extension

When importing from the replication manager database using Windows to copy the file name, note that the `.xml` extension does not appear at the end of the file name.

You must add the `.xml` extension to the end of the file name manually or go into Windows and change the folder options to see the entire file name including extensions.

Windows enabled hosts with Emulex HBAs require an Emulex utility

Windows enabled hosts require HBA driver libraries that are delivered with HP SAN Infrastructure products. If the enabled host has Emulex HBAs, an additional Emulex utility must be installed to access the driver libraries. (Windows enabled hosts with QLogic HBAs do not require an additional utility.)

Resolution: For Emulex HBAs, you must install the Emulex utility *LightPulse Utility/NT*. The utility provides a GUI that allows you to examine, manage and configure installed Emulex HBAs.

To download and install the utility:

1. Browse to the Fibre Channel Host Bus Adapters section on the following HP storage web site: http://esgcpqdev1.americas.cpqcorp.net:8030/storage/saninfrastructure.html

2. Select the HP product that corresponds to your Emulex HBA. The HBA page opens.

3. Select **Software, firmware & drivers**. The Specify Operating System page opens.

4. Select the Windows version of the Emulex HBA. The Download Drivers and Software page opens.

5. In the Utility FC HBA section, select **LPutilnt** and click **download**.

6. After downloading, copy the zip file to the enabled host, if necessary.

7. Follow the utility installation instructions. The Emulex utility is added to the Start menu on the host.

8. To open the utility window, select **Start > LPUTILNT**.

Unable to see disk in Windows Explorer after remount operation

When you unmount a host volume on a Windows platform and then mount back the drive letter, you may not see the disk in the Windows Explorer. The mount and unmount operations complete successfully. After the remount the drive is not seen in the Windows Explorer. The disk partition is seen in the disk management. Open and Explore operations on the partition also fail.

Resolution: reboot the system.

Product documentation

Table 1 lists the current versions of product documentation.

Table 2 Additional documentation

Documentation	Edition	Part Number	Location
HP StorageWorks Continuous Access EVA administrator guide	2nd Edition, May 2005	T3687–96019	http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html, also the product documentation CD.
HP StorageWorks Continuous Access EVA 2.1 overview	1st Edition, May 2005	T3687–96007	Product documentation CD, also printed in the product kit.
HP StorageWorks Continuous access EVA planning guide	2nd Edition, May 2005	T3687–96018	http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html, also the product documentation CD.
HP StorageWorks Continuous access EVA Performance Estimator user guide	2nd Edition, May 2005	T3687–96020	http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html, also the product documentation CD.
HP StorageWorks Replication Solutions Manager installation and administrator guide	1st Edition, May 2005	T3687–96008	http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html , also the product documentation CD.
HP StorageWorks EVA replication license key installation instructions	3rd Edition, April 2005	T3687–96024	Printed in the LTU envelope.
HP StorageWorks Replication Solutions Manager Command Line Interface reference	2nd Edition, May 2005	T3687–96009	http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html, also the product documentation CD.
HP StorageWorks Replication Solutions Manager 1.1 release notes	2nd Edition, June 2005	T3687–96026	http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html
HP StorageWorks JREserver installation guide	2nd Edition, December 2004	AA-RVHQB-TE	Product CD
HP StorageWorks EVA software compatibility reference	1st Edition, May 2005	T3724–96004	http://h18006.www1.hp.com/products/storage/software/conaccesseva/index.html
HP StorageWorks Business Copy EVA administrator guide	1st Edition, May 2005	T3680–96001	http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html, also the product documentation CD.
HP StorageWorks Business Copy EVA 3.0 overview	1st Edition, May 2005	T3680–96008	Product documentation CD, also printed in the product kit.
HP StorageWorks Business Copy EVA release notes version 3.0	1st Edition, April 2005	T3680–96002	http://h18006.www1.hp.com/products/storage/software/bizcopyeva/index.html

For information about HP StorageWorks Enterprise Virtual Array 3000, see: http://h18006.www1.hp.com/products/storageworks/eva3000/index.html

For information about HP StorageWorks Enterprise Virtual Array 4000, see: http://www.hp.com/go/eva4000

For information about HP StorageWorks Enterprise Virtual Array 5000, see: http://h18006.www1.hp.com/products/storageworks/enterprise/index.html

For information about HP StorageWorks Enterprise Virtual Array 6000, see: http://www.hp.com/go/eva6000

For information about HP StorageWorks Enterprise Virtual Array 8000, see: http://www.hp.com/go/eva8000

For SAN design or SAN extensions, see: http://hp.com/go/sandesignguide

For HP StorageWorks Command View EVA, see http://h18006.www1.hp.com/products/storage/software/cmdvieweva/index.html.